

REMARKS

Reconsideration of this patent application is respectfully requested in view of the foregoing amendments, and the following remarks.

The amendments to this patent application are as follows. FIG. 1 of the drawings has been revised to include reference numeral "3". Original claims 1 to 6 have been cancelled without prejudice, and have been replaced by new claims 7 to 13. New claims 7 to 13 overcome the formal objections by the Patent Examiner.

New claim 7 is based upon claim 1 and adds the feature that the attachment flange (1) has a hub element with a conical region. This is supported by the present Specification on Page 3 in lines 21 to 22.

With regard to the terminology "a shaft end assigned to the attachment flange may be friction-locked to the attachment flange", this has been rewritten as: "a shaft end assigned to said attachment flange is connectable by friction connection to said attachment flange".

Furthermore, claim 7 recites the feature that the level of the slip torque which is to be taken by the bushing (4) can be preset. Support for this is found in the present Specification on Page 4 in lines 7 to 9.

Withdrawal of these formal objections is respectfully requested.

The Applicants comment upon the prior art rejections of the claims as follows.

The present invention is directed to a shaft-hub connection comprising:

an attachment flange (1) having a hub element with a conical region;

a clamping element (6) which is attachable to said attachment flange and by means of which a shaft end (2) assigned to said attachment flange is connectable by frictional connection to said attachment flange; and

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a bushing (4) positioned between said clamping element and said shaft end to take up a slip torque and designed in multiple parts in its axial direction, and wherein the level of the slip torque which is to be taken by said bushing can be preset.

With regard to the prior art references cited by the Patent Examiner, the following discussion is provided.

Haaser U.S. Patent No. 4,944,397 discloses a mechanical device for limiting the maximum torque transferred from a driving shaft 27 to a driven power transmission element 18. The device comprises: an adapter 11 which rotates freely around this shaft 27; a sleeve 12 firmly affixed to and rotating with the shaft 27; a high friction clutch element 13 pressed between the sleeve 12 and the adapter 11; and shear pin means 24 connecting the sleeve to the adapter and providing a compressive force on the clutch element 13.

The adapter 11 has a hollow tubular interior 32. The hollow tubular interior 32 is large enough to permit the shaft 27 to pass through with bushings 14 allowing the adapter 11 to rotate freely around the shaft 27 (See-column 3, lines 5-12). However, the bushings 14 are not positioned between a clamping element and

the driving shaft to take up a slip torque. The bushing 14 are sliding bearings. In particular, *Haaser* does not disclose that his torque limiter is designed such that a level of a slip torque (which has to be taken by a bushing positioned between a clamping element and the driving shaft) can be preset.

Furthermore, the torque limiter of *Haaser* has no clamping element which is attachable to an attachment flange having a hub element with a conical region.

Whitehurst U.S. Patent No. 5,328,009 discloses an engine starting apparatus. The apparatus includes a driven clutch member 22 which carries two annular sleeve-type bushing bearings 35 and 37. However, the apparatus has no clamping element which is attachable to an attachment flange and by means of which a shaft end assigned to the attachment flange is connectable by frictional connection to the attachment flange. In particular, the bushing bearings 35 and 37 are not positioned between a clamping element and a shaft to take up a slip torque.

The *Chen U.S. Patent Application Publication No. 2002/0160888* on Page 3 in paragraphs [0042] and [0043] discloses the following.

[0042] FIGS. 2-5 illustrate a collapsible pogo stick 10. The pogo stick 10 includes, generally, a handlebar 20, a grip portion 26, a footrest 30, a pneumatic cylinder 40 and a shaft 41 extending from the pneumatic cylinder. The handlebar 20 is formed of two parallel elongate members 22 wherein each elongate member comprises a lower tube 23 and an upper tube 24 which telescopically slides into the lower tube 23. A positioning device 25 is provided at the top end of the lower tube 23 for fixing the position of the upper tube 24 relative to the lower tube 23. The position of the upper tube 24 is adjustable to accommodate users of different heights or to reduce the size of the pogo stick 10 for easy transportation or compact storage.

[0043] As illustrated in FIG. 3, the positioning device 25 comprises clamping rings 251 and shaft rods 252 which are inserted through the clamping rings 251. Cam arms 253 are coupled to the shaft rods 252 and are linked at the free end with a connection arm 254. As the cam arm 253 is rotated downward, the shaft rod 252 is pulled outward thereby reducing the diameter of the clamping ring 251. The lower tube 23 is provided at the top end with a longitudinal slot 255 such that the diameter of the lower tube 23 is reduced as the clamping ring 251 is tightened. When the diameter of the lower tube 23 is reduced,

the upper tube 24 cannot telescopically slide within the lower tube 23 and therefore the position of the upper tube 24 is fixed.

Thus, *Chen* fails to teach or to suggest the present invention as claimed.

For all these reasons, none of the prior art references provide an identical disclosure of the claimed invention. Hence, the present invention is not anticipated under 35 U.S.C. 102. Withdrawal of this ground of rejection is respectfully requested.

In summary, claims 1 to 6 have been cancelled without prejudice, and new claims 7 to 13 have been added. In view of these amendments, the present invention, and all the claims, are firmly believed to be patentable under 35 U.S.C. 103 over all the prior art applied by the Patent Examiner. Withdrawal of this

ground of rejection is respectfully requested.

Respectfully submitted,

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Enclosure: Copy of Replacement Sheet for FIG. 1

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on July 26, 2004.



Maria Guastella